

REMARKS

This is a Response to the Office Action mailed December 12, 2007, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire March 12, 2008. Attached are an Electronic Fee Transmittal and the requisite extension fee for a one-month extension of time, to April 14, 2008 (April 12 is a Saturday). No new matter has been added to the application. Claims 1-25 are pending.

Rejections Under 35 U.S.C. § 103

(I) Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchiyama et al. U.S. Patent No. 6,063,468 (hereinafter “Uchiyama”) in view of Kubota et al. U.S. Patent No. 5,698,284 (hereinafter “Kubota”).

Claim 1 recites, *inter alia*, “An optical recording medium comprising a support substrate, a light transmission layer formed on a side of a light incidence plane through which a laser beam is projected and which comprises at least one light transmission film and a recording layer located between the support substrate and the light transmission layer and containing an organic dye as a primary component, the at least one light transmission film having Vickers hardness of 30 mgf/μm² to 50 mgf/μm² with respect to a load of 200 mgf.” (Emphasis added.)

Both the Applicant and Examiner agree that the Vickers hardness test is a physical property of the material and is not related to how the disc is made. This is not a product by process claim.

Claim 1 recites that the light transmission film has a specific hardness wherein the hardness is between 30 mgf/μm² to 50 mgf/μm² when determined using the Vickers test as opposed to another hardness test (e.g., Brinell, Knoop, Shore, Rockwell, etc.). For example, a light transmission film having hardness of 30 mgf/μm² using the Vickers test has a different hardness than another light transmission film having a hardness of 30 mgf/μm² using a Brinell test. The claim is not claiming the Vickers testing process but is specifying the scale or standard to be used so as to provide a unit of measurement for hardness (i.e., a hardness gauge). Thus, the recitation of “at least one light transmission film having Vickers hardness of 30 mgf/μm² to 50

mgf/ μm^2 " does not conform claim 1 into a product by process claim. Rather such feature is a structural limitation of the hardness of the light transmission film.

The Office Action further purports that when using the Vickers hardness test the load is not critical in the determination of the hardness. This is not correct. The Examiner cites from the Wikipedia Vickers hardness test article, "It is based on the principle that impressions made by the indenter are geometrically similar regardless of load." The wikipedia article only discloses that the impressions are geometrically similar. However, geometric similarity does not necessitate dimensional equivalence. Although the shape of the impressions in the surface caused by different loads may be similar the dimensions of the impressions are different. In other words, different loads may yield different dimensions but similar geometric shapes. The dimension of the impression A on the surface together with the applied force F determines the Vickers hardness number Hv (See e.g., Wikipedia article). Since the dimension is a variable in the determination of the Vickers hardness number, the load size is indeed relevant in the determination of the Vickers hardness. In fact, to properly state a Vickers hardness value, the load is one dimension that is required to be stated (even in the same Wikipedia article, it points out that numbers for carbon steel and stainless steel are different because a different force was used). Hence, "a load of 200 mgf," as recited in claim 1 is also a structural feature of the light transmission film.

Uchiyama and Kubota do not teach or suggest the features of claim 1. In particular, Uchiyama and Kubota fail to teach or suggest having "at least one light transmission film having Vickers hardness of 30 mgf/ μm^2 to 50 mgf/ μm^2 with respect to a load of 200 mgf," as recited in claim 1.

The Office Action contends that paragraph [0124] of Uchiyama encompasses the "hardness of 30 mgf/ μm^2 to 50 mgf/ μm^2 " limitation of claim 1. Applicant strongly disagrees. Specifically, paragraph [0124] of Uchiyama discloses having an optical film hardness of "20kg/mm² or greater." This is not a teaching to having a hardness in the range of 30 mgf/ μm^2 to 50 mgf/ μm^2 , but rather to have it at 20 mgf/ μm^2 . The Examiner is improperly reading the phrase "or greater" as if it suggests or includes any possible range that is greater. This is impermissible. First, Uchiyama suggests 18-20 kg/mm² is his preferred range, making clear he

will not consider something in the 30-50 mgf/ μm^2 range. Second, more importantly, in Applicant's tests, these ranges of Uchiyama were studied and found unacceptable. As pointed out on page 40, the second and third paragraphs, identical, comparative samples #2 and #3 as the working examples of the invention were prepared, but with a Vickers hardness of 26 mgf/ μm^2 and 21 mgf/ μm^2 , respectively. These were found unacceptable. The jitter was greater than 11% and is not considered within the invention. The present application explicitly teaches that when each of the optical recording medium comparative examples 2, 3, 5, have respective first light transmission layer thicknesses equal to or greater than 20mgf/ μm^2 and thinner than 30 mgf/ μm^2 , a signal is reproduced with an unacceptably high jitter and thus does not work. Hence, it is clearly taught in the application that it would not be desirable to have the optical film hardness of "20kg/mm² or greater," as referred to in paragraph [0124] of Uchiyama, to be within the scope of "Vickers hardness of 30 mgf/ μm^2 to 50 mgf/ μm^2 with respect to a load of 200 mgf," as recited in claim 1.

As admitted on page 2 of the Office Action, Uchiyama does not disclose the Vickers hardness test. Paragraphs [0164]-[0166] of Uchiyama teach how to measure the optical film hardness. However, nowhere in these paragraphs does Uchiyama mention an optical film having a measured Vickers hardness with respect to a load of 200 mgf, as recited in claim 1.

Consequently, for at least the forgoing reasons Uchiyama does not teach or suggest "Vickers hardness of 30 mgf/ μm^2 to 50 mgf/ μm^2 with respect to a load of 200 mgf," as recited in claim 1.

Kubota fails to cure the deficiencies of Uchiyama. Kubota does not teach or suggest "Vickers hardness of 30 mgf/ μm^2 to 50 mgf/ μm^2 with respect to a load of 200 mgf," as recited in claim 1. The Office Action has cited Kubota only for *purportedly* teaching an optical recording material layer formed of an organic dye. Such is unrelated to the missing teaching of Uchiyama. As such, Uchiyama and Kubota do not teach or suggest the features of claim 1.

Furthermore, Figure 2 and col. 4, lines 1-10 of Kubota discloses an optical recording medium comprising a pattern layer 2 and an optical recording material layer 3 covering grooves of the pattern layer 2 provided on an undersurface of a transparent protective layer 1. A card substrate 4 is laminated through an adhesive layer 5 so as to sandwich the optical

recording material layer 3 between the card substrate 4 and the pattern layer 2. An intermediate layer 6 and a surface hard layer 7 are laminated on the transparent protective layer 1.

Kubota neither refers to the hardness of the intermediate layer 6 nor the hardness of the surface hard layer 7 of the optical recording medium. Consequently, Kubota also does not mention or suggest problems related to recording sensitivity. In particular, Kubota does not mention that jitter of a reproduced signal tends to become worse due to the physical deformation of a light transmission layer of an optical recording medium, as disclosed on pages 3-9 of the instant application.

Hence, from the teachings of Uchiyama and Kubota, one with ordinary skill in the art would not even be motivated to combine Kubota with Uchiyama to solve the problem set forth in the instant application.

Thus, for at least the forgoing reasons, claim 1 is patentable over Uchiyama and Kubota.

(II) Claims 4-5, 8-10 and 12-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchiyama in view of Kubota as applied to claim 1, and further in view of Aratani et al. U.S. Patent No. 6,063,468 (hereinafter "Aratani").

Uchiyama, Kubota and Aratani fail to teach or suggest the invention of claims 4-5, 8-10 and 12-13, which depend from claim 1. In particular, Aratani fails to teach or suggest the features from claim 1 that are missing from Uchiyama and Kubota. Specifically, Aratani does not teach or suggest "Vickers hardness of $30 \text{ mgf}/\mu\text{m}^2$ to $50 \text{ mgf}/\mu\text{m}^2$ with respect to a load of 200 mgf," as recited in claim 1. Instead, the Office Action has cited Aratani only for *purportedly* teaching a light transmission layer having a thickness of 0.5um to 100um. Such is unrelated to the missing teaching of Uchiyama and Kubota. As such, Uchiyama, Kubota and Aratani fail to teach the invention of claims 4-5, 8-10 and 12-13, which depend from claim 1.

(III) Claims 14, 16, 18 and 11, 15, 17, 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchiyama in view of Kubota, and further in view of Aratani as applied to claim 5, and further in view of Zhou et al. U.S. Patent Publication No. 2004/0157159 A1 (hereinafter "Zhou").

Uchiyama, Kubota, Aratani and Zhou fail to teach or suggest the invention of claims 14, 16, 18 and 11, 15, 17, 19, which depend from claim 1. In particular, Zhou fails to teach or suggest the features from claim 1 that are missing from Uchiyama, Kubota and Aratani. Specifically, Zhou does not teach or suggest “Vickers hardness of $30 \text{ mgf}/\mu\text{m}^2$ to $50 \text{ mgf}/\mu\text{m}^2$ with respect to a load of 200 mgf,” as recited in claim 1. Instead, the Office Action has cited Aratani only for *purportedly* teaching applying a light transmission layer to another layer by means of an adhesive layer. Such is unrelated to the missing teaching of Uchiyama, Kubota, and Aratani. As such, Uchiyama, Kubota, Aratani and Zhou fail to teach the invention of claims 14, 16, 18 and 11, 15, 17, 19, which depend from claim 1.

(IV) Claims 20, 22, 24 and 21, 23, 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchiyama in view of Kubota, and further in view of Aratani as applied to claim 5, and further in view of Saito U.S. Patent Publication No. 2003/0138728 A1 (hereinafter “Saito”).

Uchiyama, Kubota, Aratani and Saito fail to teach or suggest the invention of claims 20, 22, 24 and 21, 23, 25, which depend from claim 1. In particular, Saito fails to teach or suggest the features from claim 1 that are missing from Uchiyama, Kubota and Aratani. Specifically, Saito does not teach or suggest “Vickers hardness of $30 \text{ mgf}/\mu\text{m}^2$ to $50 \text{ mgf}/\mu\text{m}^2$ with respect to a load of 200 mgf,” as recited in claim 1. Instead, the Office Action has cited Aratani only for *purportedly* teaching an optical recording medium “wherein the cap layer is formed of metal so as to have thickness of 10nm to 20nm.” Such is unrelated to the missing teaching of Uchiyama, Kubota, and Aratani. As such, Uchiyama, Kubota, Aratani and Saito fail to teach the invention of claims 20, 22, 24 and 21, 23, 25, which depend from claim 1.

Conclusion

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claim. Thus, given the above remarks, independent claim 1 is in condition for allowance. The dependent claims that depend directly or indirectly on the independent claim are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

If the undersigned agent has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact Mr. Stern at (206) 622-4900.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are believed to be allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
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